Remarks

Claims 1-11, 16, 17, 19, 21-32, 34-37, 44-53, 55-76 and 85-88 are pending.

Claims 21-22, 25-27, 29-31, 36 and 51-53 have been withdrawn from consideration.

Rejection of Claims under 35 U.S.C. §102(b) (Gregory)

Claims 23, 58-61 were rejected under 35 U.S.C. §102(b) as being anticipated by USP 4,710,419 (Gregory). The rejection is respectfully traversed.

The Examiner cites to Gregory and particularly to element **89** in **Figs. 5** and **6** as teaching a plurality of molded plastic stiffener components, stating as follows (Office Action at Page 2, emphasis added):

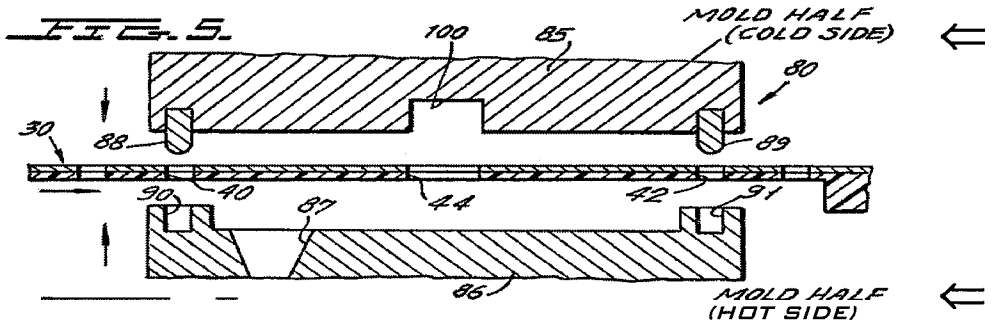
> As to claims 58-59, 61, Gregory discloses a substrate 30 (figs. 2-7) or lead frame 31; *and a plurality molded plastic stiffener components 89* (figs 2-7) secured to the substrate 30....

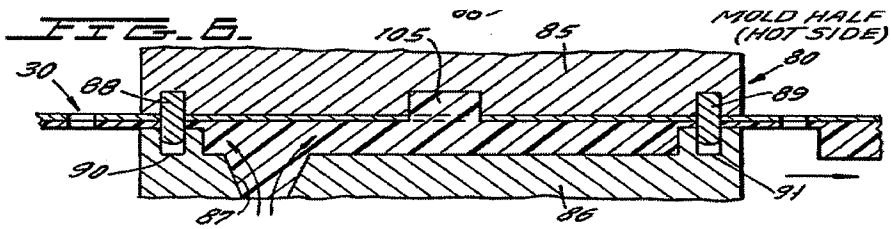
Gregory does not teach or suggest a plurality of molded stiffener components attached and secured to the substrate **30**.

Elements **88, 89** are *registration pins* that are attached to a mold half (cold side) of a mold apparatus **80**.

Contrary to the Examiner's assertion, registration pins **88, 89** are not attached to substrate **30.** Registration pins **88, 89** attached to the (cold side) mold half are inserted *through* openings **40, 41, 42, 43** of substrate **30** – and into pin openings **90, 91** of the other mold half (hot side).

See **Figs. 5-6** below.

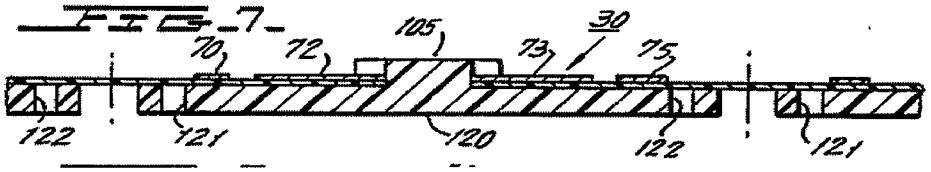


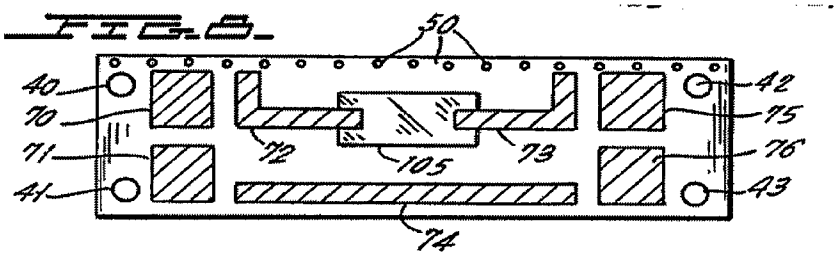


Also see Gregory's discussion regarding the mold halves and registration pins at col. 3, lines 56-61, at col. 5, lines 12-19, at col. 6, lines 28-65, and at col. 7, lines 14-20 (emphasis added):

> **FIG.5** shows the *mold halves* into which the foil of FIG.1 is introduced in accordance with the present invention, with the mold halves open.
>
> **FIG. 6** shows the mold of FIG. 5 with the mold halves closed and a thermoplastic resin injected into the cavity formed by the closed mold halve.
>
> ...
>
> ...As shown in FIG. 3, the web is continuous and can have any desired width...The web can have numerous openings formed therein. For example, in FIG. 3 *the laminate **30** has openings **40, 41, 42 and 43*** therein which serve to receive mold registration pins, as will be later described...
>
> ...
>
> ...*The molding stage **80** is best shown in **FIGS. 5 and 6** for an injection molding process* of a thermoplastic resin... The mold in **FIGS. 5 and 6** consists of a *cold mold-half side **85*** and a *hot mold-half side **86**. The mold is a conventional injection molding apparatus having a mold gate **87**, with registration pins **88 and 89** in mold-half **85*** registering with *registration pin openings **90, 91** ...in the hot mold-half **86***...Thus after twenty seconds the mold is opened and the web **30** is indexed to the right to place a new web section between the open mold-halves and the molding cycle is continued....
>
> ...
>
> **FIG. 7** shows the final web.....The molded body of resin, which is formed in the mold cavity of **FIGS. 5 and 6**...

After molding is completed, the mold halves are opened and substrate **30** is removed. **FIGS. 7-8** below illustrate the molded product. As illustrated, the substrate **30** does not have any pins ***88, 89*** attached to it. After molding, the pins **88**, **89** are *removed* from contact with the substrate **30**.





Clearly, pins **88, 89** are *not* attached to substrate **30**.

In contrast to Gregory, Claims 1, 58 and 61 recite a device defined by a plurality of molded thermoplastic components attached to the substrate, the substrate and the stiffeners being separate components that are attached and secured together. To the extent that Claim 23 depends from independent Claim 1, it incorporates all limitations thereof.

Gregory does not teach or suggest the Applicant's device as claimed. Accordingly, withdrawn of this rejection is respectfully requested.

Rejection of Claims under 35 U.S.C. § 102(b) (McMillan)

Claims 1-2, 9, 16, 28, 37, 24, 34, 60, 35, 44-50, 62-76, 55-58 and 85-88 were rejected under 35 U.S.C. § 102(b) as being anticipated by USP 5,650,593 (McMillan).

The claims require a plurality of stiffeners attached to a substrate. Claims 34, 44, 48, 55-58, 62-63 and 73-74 additionally recite one or more dies situated on a first surface of the substrate and/or a plurality of stiffeners attached proximate to the periphery of the substrate.

The Examiner cites to McMillan and particularly to **Figs. 3, 6** and **16** as disclosing a semiconductor device having all of the elements of Applicant's claimed devices (Office Action, pages 3 and 4, emphasis added):

> As to claims 1, 24, 34, 85, McMillan discloses a substrate 12 (fig. 6); a die 18 (fig. 16) situated on the first surface of the substrate 12 and *a plurality molded plastic stiffener components 217* (fig.6) secured to the substrate...
>
> As to claims 24, 34, 60, McMillan teaches the semiconductor device having a substrate 12 (fig. 6) and a *stiffeners* 217 (fig. 6) molded to the first surface of the substrate 12 and *a die 18."*
>
> As to claims 35 and 62-63, McMillan's *stiffeners* 17 are disposed at the periphery of the substrate 12 (fig.3)...

The Examiner's assertion is in error.

Fig. 6 of McMillan illustrates a casing **217** as a single and continuous structure that forms a dam on circuit substrate **12** – *not* a *plurality* of casings **217**.

See element **217** in **Figs. 1B** and **6** below. (See also at col. 6, lines 47-50 and at col. 9, lines 10-13 (casing **217** in the form of a dam).

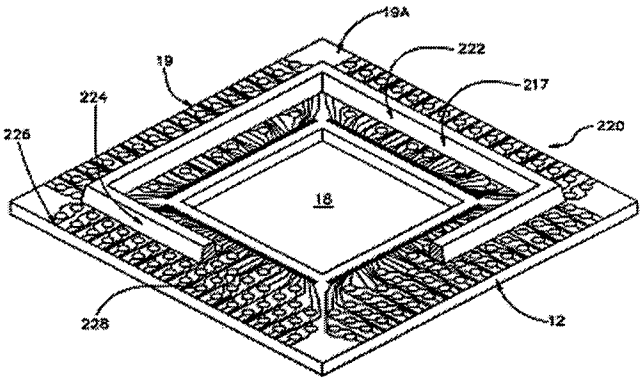


FIG. 6

As such, McMillan does **not** describe a *plurality* of components attached to a substrate as required by the claims.

Nor is there any suggestion in McMillan to form a plurality of components. Casing **217** is formed as a dam to contain encapsulant that is dispensed onto a chip (situated within cavity **18**). One skilled in the art would not alter casing **217** into multiple elements.

McMillan does not teach or suggest Applicants' device as claimed. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection of Claims under 35 U.S.C. §103(a) (McMillan and APA)

Claims 3-8 were rejected under 35 U.S.C. §103(a) as obvious over McMillan.

Claims 10, 11, 55-57 were rejected as obvious over McMillan in view of "Admitted Prior Art" (APA), citing to Applicant's Figures 1-2 and specification at pages 1-2.

These rejections are respectfully traversed.

The Examiner maintains that it would be obvious to modify McMillan by using a thermosetting material as taught by APA to form the "stiffener" (segmented casing **217**) of the present Application.

The claims at issue recite a device defining a *plurality* of stiffener components secured to a substrate without adhesive attachment.

For the reasons stated above with regard to McMillan's failure to disclose the recited elements of the claims, the proposed modification of McMillan's device with the APA would *not* result in Applicant's devices as claimed.

Accordingly, withdrawal of this rejection of the claims is respectfully requested.

Extension of Term. The proceedings herein are for a patent application and the provisions of 37 CFR § 1.136 apply. Applicant believes that a one month extension of term is required. However, this conditional petition is being made to provide for the possibility that Applicant has inadvertently overlooked the need for a petition for extension of time. If any extension and/or fee are required, please charge Account No. 23-2053.

It is respectfully submitted that the claims are in condition for allowance and notification to that effect is earnestly solicited.

Respectfully submitted,

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Dated: February 7, 2008

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